

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



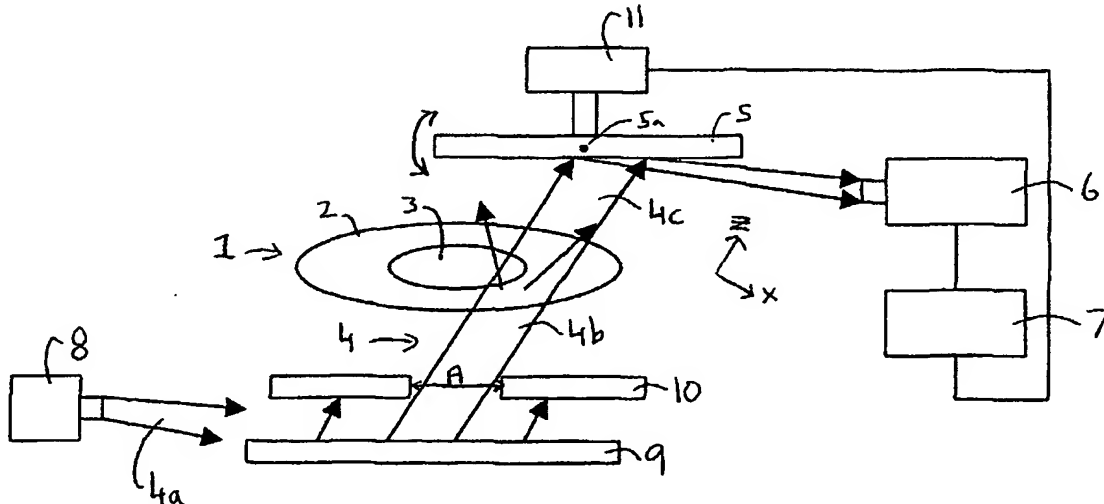
(43) International Publication Date
24 December 2003 (24.12.2003)

PCT

(10) International Publication Number
WO 03/106983 A1

- (51) International Patent Classification⁷: G01N 23/02
- (21) International Application Number: PCT/AU03/00748
- (22) International Filing Date: 16 June 2003 (16.06.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
PS 2993 17 June 2002 (17.06.2002) AU
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- (81) Designated States (national): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC,
SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG,
US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,
SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:
— with international search report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHODS AND APPARATUS OF SAMPLE ANALYSIS



(57) Abstract: An x-ray beam (4) from a rotating anode source (8) is passed through an object (1) via a monochromator (9) and slit member (10) in order to determine the object's internal structure. The emerging radiation that is within the acceptance angle of a crystal analyser (5) is diffracted onto a PIN diode detector (6), which records an intensity profile of the radiation detected as a function of angular position of the crystal analyser (5). The resulting profile is analysed to provide a complex refractive index profile for the object (1) across the width of the beam (4). The analysis method and apparatus utilises both absorption and refraction information, and can provide both qualitative and quantitative information on the object's structure, with the dimensions of the slit member (10) providing an analytical intensity profile.